

REMARKS

Claims 1-14 are pending. Claims 1, 5, and 7-13 have been amended. Claims 2-4 and 6 are original. Claim 14 is new.

The foregoing amendments do not involve new matter. Claim 10 has been amended to replace “Tyzor™” with “organic titanates and zirconates”. Tyzor is a trademark used by DuPont for their organic titanates and zirconates products (see, for example, http://www2.dupont.com/Tyzor/en_US/index.html, accessed on March 5, 2010). A person with ordinary skill in the art would understand, at the earliest filing date of this application, that a generic description for “Tyzor™” is “organic titanates and zirconates”. Support for new claim 14 can be found in Applicants’ specification, for example, in original claim 9.

1. Specification

The Examiner asserted that the term “dielectric layer” is not explicitly defined in the specification (Office Action, page 3). The Examiner further asserted that dielectric layer is interchangeable with photoconductive layer (Office Action, page 3). A person with ordinary skill in the art would appreciate that a dielectric is an electrical insulator that may be electrically charged by the action of an applied electric field. When a dielectric is placed in an electric field, electric charges do not flow through the dielectric material, as in a conductor, but only slightly shift from their average equilibrium positions causing dielectric polarization. A photoconductor is one form of dielectric which has the same characteristics as a dielectric but also when light is shined onto it, causes the dielectric to conduct, thereby allowing any charge to dissipate. Accordingly, the Applicants respectfully submit that meaning of the terms “dielectric layer” and “photoconductive layer” is clear, and that the two terms are not interchangeable with each other.

2. Claim Rejections under 35 U.S.C. § 102(e) and 103(a)

A. Claims 1-5, 7-9, And 11-13

Claims 1-5, 7-9, and 11-13 have been rejected under 35 U.S.C. § 102(e) over McEntee et al. (U.S. Pat. Pub. No. 2004/0050701). The Applicants respectfully traverse this rejection based on the following.

The Examiner has conceded that McEntee teaches a substrate where “the deposited material chemically *bonds to the photoconductive layer surface* at the preferred location” (Office Action, pages 4 and 6-9; emphasis added). McEntee also expressly teaches that “the deposited material chemically bonds to the [photoconductive] array surface at the preferred location” (paragraph 0050, lines 12-13; emphasis added). In other words, McEntee teaches that the photoconductive layer surface itself could be chemically reactive. McEntee does not teach any separate chemically functional layer disposed on the dielectric/photoconductive layer that provides a protective layer for the dielectric/photoconductive layer and a chemically reactive surface for compounds to be deposited to the substrate.

Moreover, although the substrate 110 in McEntee “may further comprise additional layers (not shown) for chemical, biological, mechanical, structural or other purposes” (paragraph 0052, lines 5-7), there is no teaching in McEntee that these possible additional layers should be on the front surface of the dielectric/photoconductive layer. For example, the possible additional layers may well be on the back surface of the substrate 110 to give the necessary strength to the assembly. Indeed, if the additional layers were on front, then the photoconductive layer surface would not perform as specified in McEntee, where “the deposited material chemically *bonds to the photoconductive layer surface*”.

In contrast, the substrate as recited in amended independent claim 1 requires “a chemically functional layer on the dielectric layer, the chemical functional layer providing a protective layer for the dielectric layer and a chemically reactive surface for compounds deposited on the surface”. The substrate as recited in amended independent claim 11 requires “a chemically functional layer on the photoconductive layer, the

chemical functional layer providing a protective layer for the photoconductive layer and a chemically reactive surface for compounds deposited on the surface". The substrate as recited in amended independent claim 12 requires "a chemically functional layer on the photoconductive layer, the chemical functional layer providing a protective layer for the photoconductive layer ... the chemically functional layer comprising at least in part a chemically active material to which a molecule can be attached". The substrate as recited in amended independent claim 13 requires "a chemically functional layer on the photoconductive layer, the chemical functional layer providing a protective layer for the photoconductive layer".

In view of the above, the Applicants respectfully submit that McEntee does not teach all of claim limitations as recited in amended independent claims 1 and 11-13. Accordingly, the rejection of amended independent claims 1 and 11-13, and thus the rejection of claims 2-5 and 7-9 which depend from amended independent claim 1, are improper and should be withdrawn.

B. Claims 6 And 10

Claims 6 and 10 have been rejected under 35 U.S.C. § 103(a) over McEntee and further in view of Salafsky et al. (U.S. Pat. Pub. No. 2002/0094528). The Applicants respectfully traverse this rejection based on the following.

Claims 6 and 10 are all dependent on amended independent claim 1. Claim 1 has been shown to be patentable over McEntee. Further, the claimed features of claim 1 are not taught by Salafsky. Thus, McEntee and Salafsky, even if combined, would not make the invention of claim 1 obvious. Claim 1, and claims 6 and 10 dependent thereon, are thus patentable over McEntee and Salafsky.

3. Conclusion

In view of the above, the Applicants respectfully submit that the claims are in condition for allowance. The Examiner is kindly invited to contact the undersigned attorney to expedite allowance.

Respectfully submitted,

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